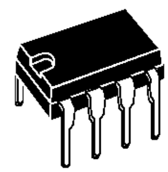
SGS-THOMSON MICROELECTRONICS

TDA7275A

MOTOR SPEED REGULATOR

ADVANCE DATA

- EXCELLENT VERSATILITY IN USE
- HIGH OUTPUT CURRENT (up to 1.5 A)
- LOW QUIESCENT CURRENT
- LOW REFERENCE VOLTAGE (1.32 V)
- EXCELLENT PARAMETERS STABILITY VERSUS AMBIENT TEMPERATURE
- START/STOP FUNCTION (TTL levels)
- DUMP PROTECTION



MINIDIP
(4 + 4)

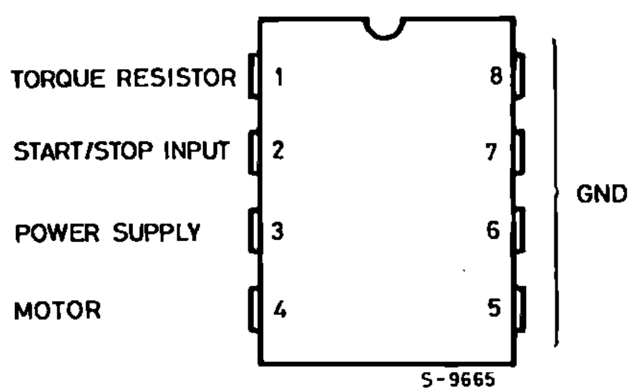
ORDERING NUMBER : TDA7275A

DESCRIPTION

The TDA7275A is a linear integrated circuit in minidip plastic package. It is intended for use as speed regulator for DC motors of record players, tape and cassette recorders.

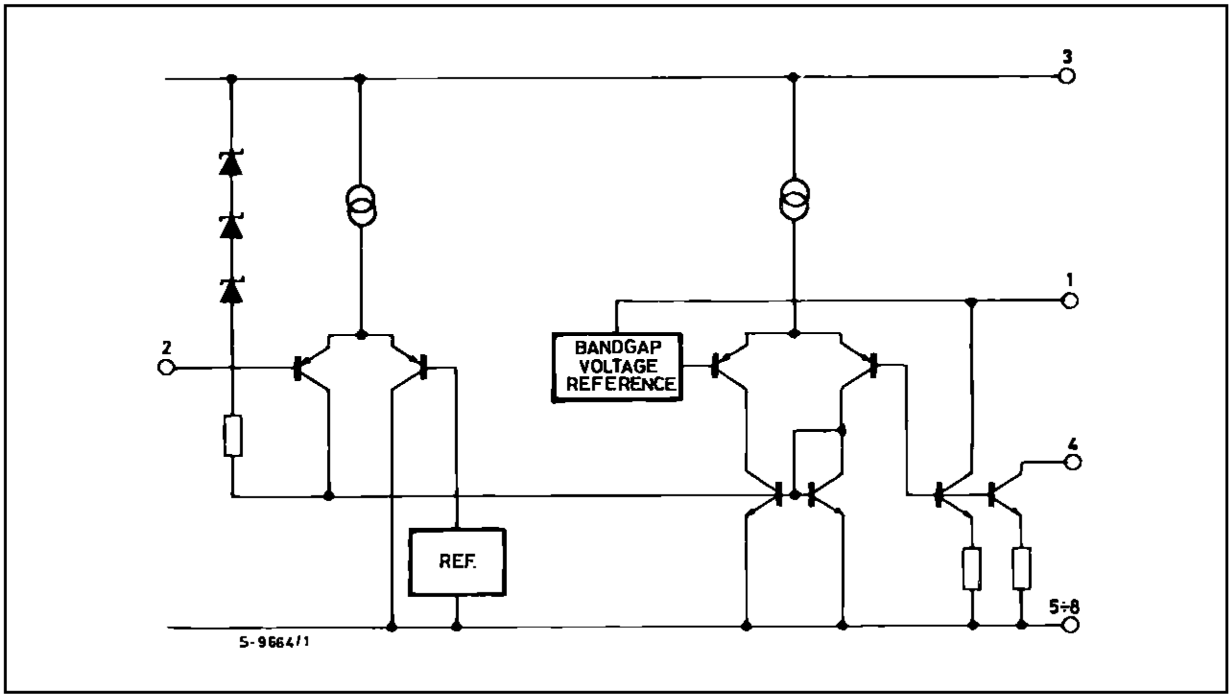
The dump protection make it particularly suitable for car radio applications.

PIN CONNECTION (top view)



This is advanced information on a new product in development or undergoing evaluation. Details are subject to change without notice.

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	19	V
V_S	Peak Supply Voltage (for 50ms)	45	V
I_M	Maximum Output Current	1.5	A
T_{op}	Operating Temperature Range	–30 to +85	°C
P_{tot}	Power Dissipation at T_{amb} = 70°C at T_{pins} = 70°C	1 4	W W

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient Max.	80	°C/W
$R_{th\ j\text{-}pins}$	Thermal Resistance Junction -pins Max.	20	°C/W

ELECTRICAL CHARACTERISTICS (Refer to test circuit, V_S = 12V, T_{amb} = 25°C unless otherwise specified, refer to test circuit)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Voltage Range		8		18	V
V_{ref}	Reference Voltage	I_M = 0.1A	1.05	1.22	1.35	V
$I_q + I_d$	Total Quiescent Current	I_M = 0.1mA		2		mA
I_d	Quiescent Current	I_M = 0.1mA		1		mA
I_{ms}	Starting Motor Current	$\frac{\Delta V_{ref}}{V_{ref}} = -50\%$	1			A
V_4	Saturation Voltage	I_M = 0.5A		1.7	2	V
$K = I_M/I_T$	Reflection coefficient	I_M = 0.1A	18	20	22	–
$\frac{\Delta K / \Delta V_S}{K}$		I_M = 0.1A V_S = 8 to 16V		0.5		%/V
$\frac{\Delta K / \Delta I_M}{K}$		I_M = 25 to 200mA		–0.05		%/mA
$\frac{\Delta K / \Delta T}{K}$		I_M = 0.1A T_{op} = –30 to +85°C		0.02		%/°C
$\frac{\Delta V_{ref} / \Delta V_S}{V_{ref}}$	Line Regulation	I_M = 0.1A V_S = 8 to 16V		0.04		%/V
$\frac{\Delta V_{ref} / \Delta I_M}{V_{ref}}$	Load Regulation	I_M = 25 to 200mA		–0.01		%/mA
$\frac{\Delta V_{ref} / \Delta T}{V_{ref}}$	Temperature Coefficient	I_M = 0.1A T_{op} = –30 to +85°C		0.02		%/°C
V_2	Motor ”Stop” (Acc. Following data or grounded)			1		V
I_2	Motor ”Stop”	V2 = 1V		–0.05		mA
V_2	Motor ”Run” (Acc. Following data or open)			1.5		V
I_2	Motor ”Run”	V2 = 1.5V		–0.1		mA

Figure 1 : Test Circuit.

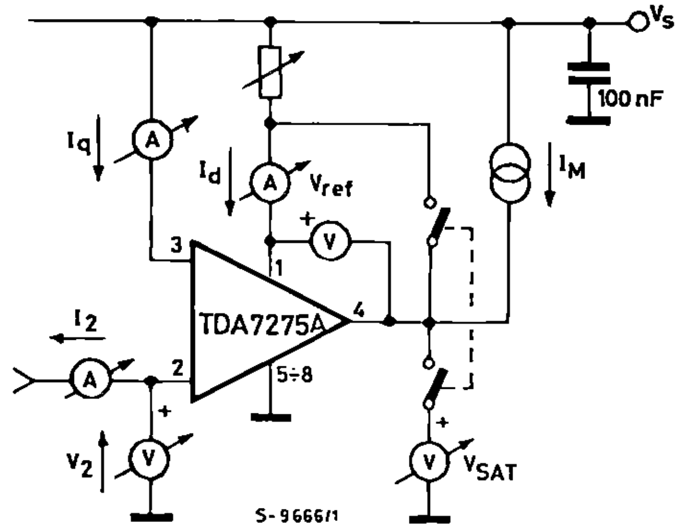
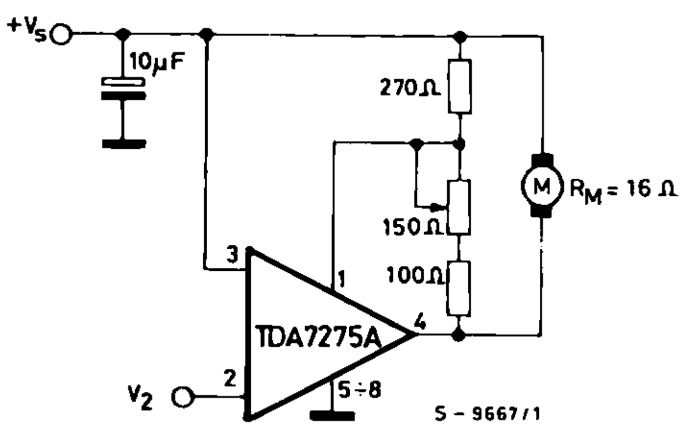


Figure 2 : Application Circuit.



– $R_{Ttyp.} = K_{typ.}\ R_{Mtyp.}$ if $R_T > K_{min}\ R_{Mmin}$ instability may accur.

– A diode across the motor could be necessary with certain kind of motor.

Figure 3 : Quiescent Current vs. Supply voltage.

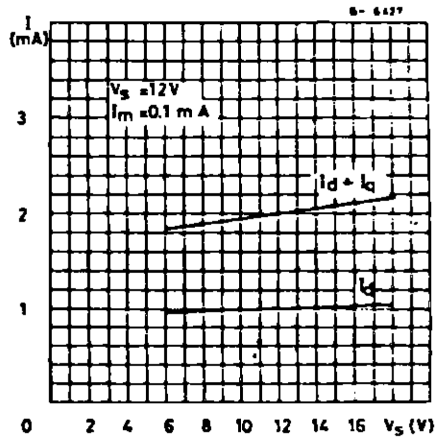


Figure 4 : Speed Variation vs. Supply Voltage.

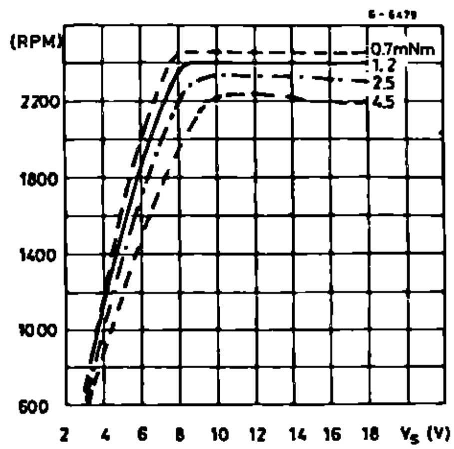
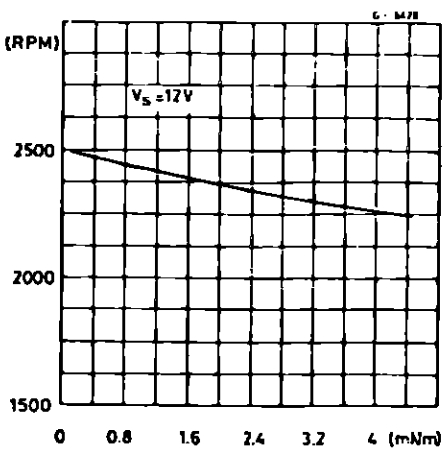


Figure 5 : Speed Variation vs. Torque (V_S = 12 V).



MINIDIP PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		3.3			0.130	
a1	0.7			0.028		
B	1.39		1.65	0.055		0.065
B1	0.91		1.04	0.036		0.041
b		0.5			0.020	
b1	0.38		0.5	0.015		0.020
D			9.8			0.386
E		8.8			0.346	
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			7.1			0.280
I			4.8			0.189
L		3.3			0.130	
Z	0.44		1.6	0.017		0.063

